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August 26, 1996

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW, Room 222
Washington, DC 20554

Dear Mr. Caton:

DOCKET FILE COPY ORIGINAL

Re: CC Docket No. 95-116, Telephone Number Portability

On behalf of Pacific Telesis Group, Pacific Bell, Nevada Bell, and Pacific Bell Mobile Services, please find enclosed an original and six copies of their "Petition for Clarification or, in the Alternative, Reconsideration" in the above proceeding. Appendix A is confidential and proprietary and we are filing it under seal with a Request for Confidential Treatment (attached).

Please stamp and return the provided copy to confirm your receipt. Please contact me should you have any questions or require additional information concerning this matter.

Sincerely,

Alan F. Ciamporcero (JLB)

Enclosure

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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OFFICE OF SECRETARY

In the Matter of

Telephone Number Portability

CC Docket No. 95-116

PETITION FOR CLARIFICATION
OR, IN THE ALTERNATIVE, RECONSIDERATION

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Date: August 26, 1996

TABLE OF CONTENTS

	Page
SUMMARY	ii
PETITION FOR CLARIFICATION OR, IN THE ALTERNATIVE, RECONSIDERATION	1
I. THE COMMISSION SHOULD ALLOW QOR TO BE USED WITHIN A CARRIER'S NETWORK OR BETWEEN CONSENTING NETWORKS	2
A. Background	2
B. The FCC Evidently Precludes Carriers From Using QOR Even For Their Own Customers' Originating Calls	4
C. There Will Be No Harm To Customers Who Port Their Number As A Result Of Our Use Of QOR	5
D. QOR Has Important Benefits That Cannot Be Ignored	7
E. Paragraph 54 Preclusion Of QOR Is Dependent On Incorrect Facts And Should Be Reconsidered	10
II. THE ORDER SHOULD BE CLARIFIED TO INCLUDE INTERMEDIATE NETWORKS IN THE IMPLEMENTATION SCHEDULE	12
III. PACIFIC SEEKS CLARIFICATION OF ONE ASPECT OF THE NUMBER PORTABILITY REQUIREMENTS APPLICABLE TO CMRS PROVIDERS AFTER JUNE 30, 1999	15
IV. CONCLUSION	16

SUMMARY

The Commission should expeditiously clarify and/or reconsider its order to allow QOR to be used by a carrier when its customers originate a call to an exchange originally assigned to that carrier. Using QOR in this way does not force reliance on another carrier's network, and any variance in post-dial delay associated with QOR used in this way will not affect the customer porting his number, and will not result in any greater delay than exists today in call set up.

In addition, we request clarification that intermediate carriers must comply with the implementation schedule. Finally, we seek clarification that CMRS providers are not precluded from making arrangements with other carriers to perform database queries.

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PETITION FOR CLARIFICATION
OR, IN THE ALTERNATIVE, RECONSIDERATION

Pacific Telesis Group and its subsidiaries Pacific Bell, Nevada Bell and Pacific Bell Mobile Services ("Pacific Telesis") file this petition for clarification or, in the alternative, reconsideration of the Commission's First Report and Order ("the Order") released July 2, 1996 relating to telephone number portability. We seek clarification and/or reconsideration of three items in the Order. First, we seek review of the choice of technology for local number portability ("LNP"). In the Order, the Commission evidently precluded carriers from using Query on Release ("QOR") even for calls originated by their customers and destined for telephone numbers in NXX codes assigned to that carrier. The Commission should clarify or reconsider its decision because using QOR in this manner meets all the requirements set forth in the order for a number portability solution. In addition, QOR has other benefits which make it more efficient and easier to deploy as well as less likely to have a negative impact on network reliability.

The other two items for which we seek clarification are how intermediate networks and network failures are handled, and how CMRS providers may implement LNP.

I. THE COMMISSION SHOULD ALLOW QOR TO BE USED WITHIN A CARRIER'S NETWORK OR BETWEEN CONSENTING NETWORKS¹

A. Background

Local Routing Number ("LRN") is currently being developed to accomplish long term number portability. One significant drawback to LRN is that it requires a database dip on every interswitch call to a ported NXX. This requirement translates into the necessity for billions of unnecessary database queries for calls to nonported numbers. The LECs, with the largest base of numbers, are concerned about the cost and reliability of an LNP methodology that would result in billions of unnecessary database queries. QOR was developed to minimize the number of queries to be launched (and therefore the number of the database(s) and interconnecting links that would need to be deployed).

QOR is not a substitute for LRN, it is an enhancement. Here's how it works. Exchange codes (NXXs) are assigned to particular carriers, and are physically located in their switches. Today, when a call is made, the caller's switch knows where to send it by examining the area code and NXX of the phone number. With number portability, the called party may change local service providers and take her number to the new service provider. Therefore, a

¹ This portion of this Petition is concurred in by GTE, BellSouth, Cincinnati Bell, Southern New England Telephone Co., SBC, Denver & Ephrata Telephone Co. and USTA on behalf of its member companies.

database must be built so that the "location routing number" of the appropriate switch can be determined.

Without QOR, we must do a database dip on every call to any of the 10,000 numbers in each exchange (NXX) whenever one of those numbers is ported to a new carrier. All calls to that exchange will be subject to a delay imposed by the database look-up.

With QOR, instead of automatically doing a database look-up on every call to the NXX, the Pacific Bell switch serving the caller first sends a short SS7 data message to the Pacific Bell switch to which the exchange is assigned. If that switch still has the number (because Pacific, or a reseller, is providing local service to that customer), that switch tells the caller's switch to send the call along, as it does today. If the number no longer resides in the switch, the caller's switch performs the database look-up and routes the call to the appropriate carrier.

QOR can be implemented within an individual carrier's network. In that situation, calls destined for NXXs assigned to other carrier's networks would not use QOR. Instead, we will perform a database dip immediately without first attempting to complete the call. QOR will only be used for calls to NXXs assigned to our network. The fact that a carrier chooses to deploy QOR within its own network does not require an interconnecting carrier to use QOR as well. If two carriers agree, QOR can operate effectively between networks.

The Order should be clarified to specify that a carrier can use QOR for calls originated by their customers to NXXs originally assigned to their network and between consenting networks. Using QOR in this manner is consistent with the criteria in Section 52.3 of the Commission's Rules (47 C.F.R. § 52.3) in that no reliance on other carriers' networks is

required.² In the alternative, the Commission should reconsider the Order to allow QOR to be used in this manner.

B. The FCC Evidently Precludes Carriers From Using QOR Even For Their Own Customers' Originating Calls

The FCC decided that QOR was unacceptable because it forced carriers to rely on other carriers' networks.³ However, this concern is unfounded if QOR is used for calls originated by their customers to telephone numbers in NXX codes assigned to that carrier, or to other consenting carriers.

We want to be able to use QOR for calls that originate on our network and which are to NXX codes assigned to our network. In this situation, no carrier will be forced to rely on any other carrier's network; no carrier will need to be QOR release-capable, or have any capabilities other than LRN if they choose not to use QOR. Thus no additional capital or expense will need to be spent by any carrier as a result of allowing us to use QOR. However, if a carrier consents to using QOR between networks, then that can also be accommodated with this architecture.

² As with AT&T's LRN, the originating and/or intervening network (N-1) is responsible for call completion. QOR, like LRN, does not change this necessary reliance for interoperability of networks.

³ Order, para 53.

C. There Will Be No Harm To Customers Who Port Their Number As A Result Of Our Use Of QOR

The Commission was concerned with additional post-dial delay associated with QOR.⁴ There are two reasons why this concern is unfounded and cannot form the basis of a decision to preclude QOR. First, there is no evidence that any additional post-dial delay is perceptible to the end user. Second, deploying QOR within our network will not result in any detriment to the called party who has ported their number.

We estimate for most calls that the delay associated with QOR, above that which is present with LRN alone, is less than one-half second. Calls today vary substantially in post-dial delay, depending on the type of signalling used (MF or SS7), the types and numbers of switches in the call path, trunking architecture (end office or tandem), and the amount of traffic on the network. Many of these variations result in post-dial delay greater than one-half second. Studies performed recently verify that in an SS7 equipped network, where call set up time is quite fast, end user perception of post-dial delay will not be triggered as long as the additional post-dial delay is less than 2.5 seconds.⁵ Any post-dial delay associated with QOR is well within this tolerance.

The Commission, in the Order, failed to reconcile the Telecommunications Act's requirement that number portability be "without impairment of quality, reliability, or

⁴ Order, paras 53, 54.

⁵ MacDonald, D. & Archambault, S., Using Customer Expectations in Planning the Intelligent Network, Proceedings of the 14th International Teletraffic Congress (ITC), pp. 95-104, 1994.

convenience”⁶ with its standard of not allowing “any degradation.”⁷ “Impair” is defined as “to damage or make worse by or as if by diminishing in some material respect.”⁸ There is no justification in the Order, and no justification exists, for the contention that adding a tiny post-dial delay (approximately 400 milliseconds) to some calls diminishes calls in a material respect. This is especially true of “POTS” calling where wide variances currently exist in call set up times.

More importantly, however, any post-dial delay associated with QOR will not harm competition. Any deleterious effect of QOR, and any resulting incremental post-dial delay, will affect only originating customers. It is the originating customer who incurs post-dial delay. The terminating customer is unaware of, and unaffected by, any post-dial delay incurred by the originator of the call. Thus, it is the originating customer who will incur the additional fraction of a second (assuming she can even perceive it); the terminating customer does not know (nor care) that his telephone might have rung a fraction of a second earlier.

The Commission recently recognized that it does not need to prohibit a LEC from introducing call delay to its customers. In discussing standards for unreasonable post-dial delay in connection with section 251 (b)(3), the Commission reasoned that:

“prohibiting a providing LEC from introducing dialing delay in the originating segment of calls under its control benefits only the customers of the providing LEC. The providing LEC already has

⁶ 47 USC § 153 (30).

⁷ Order, para 56.

⁸ Webster’s Ninth New Collegiate Dictionary, 1988.

sufficient motivation to provide efficient service to its own customers.”⁹

Thus, the Commission should similarly find that LECs have appropriate incentives to not provide substandard service to their own customers, and allow QOR to be used. If new entrants find QOR to their advantage, they too can deploy it.

D. QOR Has Important Benefits That Cannot Be Ignored

Not only is there no detriment to any party by allowing us to use QOR, there are substantial benefits resulting from allowing us to deploy QOR in the manner proposed. The benefits are better efficiency within the network, substantially lower cost, increased network reliability, and greater ability to meet the implementation schedule.

The LRN solution to number portability requires a database query on every call leaving a switch to a ported NXX. This will require an enormous number of calls to be subjected to a database dip whether or not the calls are to numbers that have been ported. Thus, particularly in the near term, billions of unnecessary queries will be made. Consequently, the databases themselves, the signalling network to the databases, and the end office switch processors need to be sized to accommodate billions of unnecessary queries. QOR, on the other hand, requires queries only on those calls where the called number has been ported, resulting in

⁹ Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, Second Report and Order and Memorandum Opinion and Order, released August 8, 1996, para 162.

significantly fewer Service Control Points (SCPs or databases), signalling links, as well as switch and STP upgrades.

Of course this efficiency translates into dollars -- millions of them. Capital investment as well as expense (particularly transaction) costs for LRN without QOR is enormous. QOR, even deployed in the limited way outlined herein, saves hundreds of millions of dollars. In its Order, the Commission mistakenly asserts that QOR would not result in significant cost savings,¹⁰ citing Pacific's June 6, 1996 submission. That ex parte submission illustrated a \$71M¹¹ cost savings over 5 years irrespective of regional SMS costs or impacts to switch real-time. We now have updated our costs based upon the substantial switch real time effects of LRN. LRN, in suspending each interswitch call in order to perform the database query, formulating the query, acting on the query response, etc., uses up capacity within the central processor of the switch. Thus, the switch needs to do all of its normal functioning plus these additional tasks. The capacity of the switches therefore needs to be increased as a direct result of LRN. These augmentations to switch capacity are costly.

With the addition of the switch real time impacts, the revised costs needed to implement LRN as opposed to QOR have been calculated. We have attached hereto a detailed cost study justifying the differences in costs for LRN only, or deploying LRN with the limited use of QOR for calls originated by our customers to numbers in NXXs assigned to our network. Our cost studies indicate that the cost savings with using QOR in this fashion is approximately

¹⁰ Order, para 54.

¹¹ The FCC evidently divided 71M by five years to come up with the \$14.2M figure cited in the Order. This simplistic calculation fails to take into account the disproportionate first year capital and expense outlays.

\$130M over 5 years. Of this amount, \$93M or 71% of the cost differential will be expended in the first 15 months.¹²

Permitting QOR within our network also eases network reliability concerns. The Commission formed its Network Reliability Council as a result of concerns triggered by the SS7 network outages in 1991. Deploying LRN in the manner ordered by the Commission, i.e., in the top 100 MSAs in the country within a very short time, puts the network at risk for two reasons. First, the introduction of number portability represents a new, huge load on the SS7 network (including addition of new databases) and switch processors. One of the main benefits of QOR is that the load on the SS7 network is lessened, since queries are launched only for those numbers that have been ported. We estimate this will initially reduce the load in a sample MSA by 90% in the first year of implementation. Second, the deployment begins with the most populous MSAs, as opposed to most network upgrades, which start with technology trials in smaller areas in order to contain and address any unforeseen problems.

Finally, QOR may help us implement number portability in accordance with the very aggressive implementation timeline ordered by the Commission. With QOR, less work and capital needs to be invested, fewer facilities built, and fewer switches need to be augmented or replaced. QOR allows a ramp-up effect of number portability deployment, with only those facilities actually needed by the ported traffic to be built. If LRN alone is required, the network

¹² Attached hereto as Appendix A is the Pacific Bell Cost Study and explanation of these amounts. But as this submission contains proprietary and confidential information, we are submitting it with a request for confidentiality pursuant to Section 0.469 of the Commission's Rules.

needs to be built at 100% capacity from the start (assuming, as we do in California, that almost every exchange will have at least 1 number that has been ported).¹³

E. Paragraph 54 Preclusion Of QOR Is Dependent On Incorrect Facts And Should Be Reconsidered

Paragraph 54 of the Order states many reasons why QOR should not be allowed. However, many of the reasons are factually incorrect, or do not apply if QOR is used only within our network in the way we have outlined.

First, paragraph 54 states that QOR “would treat ported and nonported numbers differently.”¹⁴ All number portability methods fail this “test.” LRN treats ported and nonported numbers differently, particularly in intraswitch calls. So, with LRN (without QOR), if an end user calls a neighbor served by the same central office who has not ported his number, that call completes without a database lookup. However, if a person calls another neighbor who has ported her number to another carrier, a database query will be launched, resulting in differential call handling. QOR has a very similar call handling scenario. Thus, it must be acceptable for ported and non-ported numbers to be handled differently as long as there is no “impairment of quality, reliability or convenience.”¹⁵ With this standard, both QOR and LRN should be acceptable.

¹³ This also leaves open the real likelihood of stranded investment, as our network needs to be built at 100% capacity at day 1. As customers leave our network, we will have facilities we no longer need and are no longer useful.

¹⁴ We note that this does not appear to be a standard set forth in the criteria in Section 52.3 of the Commission's Rules.

¹⁵ 47 U.S.C. §3(30).

Second, paragraph 54 states that QOR would “force reliance on the incumbent LEC’s network.” As we have shown above, permitting QOR within a network does not force any reliance by any other carrier. In addition, the originating network will always be involved in setting up any call (whether LRN or QOR is used¹⁶). QOR does not add to that reliance.

Third, paragraph 54 says that QOR would increase post-dial delay and the potential for call blocking. This is untrue. We have explained above why post-dial delay is not a significant issue. Moreover, QOR has been designed such that if any network congestion is experienced during QOR processing, QOR processing will cease and a database query will be performed to complete the call. No other call blocking will occur.

Fourth, paragraph 54 says that QOR would “result in inefficient routing.” The fact is that QOR does not affect routing of calls in any way. The routing of a call to a ported number using LRN without QOR is accomplished in exactly the same way as LRN with QOR.

Fifth, paragraph 54 says that QOR “creates significant network interoperability issues.” There are no network interoperability issues if QOR is used within our own network or between consenting networks.

Finally, paragraph 54 states that QOR would “delay deployment of a long term number portability method.” The fact is that Siemens, Nortel and (it appears) Lucent have indicated that QOR functionality will be provided in time to meet the schedule in the Order. In

¹⁶ In fact, all call models have suggested defaulting to the original network -- whether this default capability has to be supported is unclear. All default parameters may require reliance on others’ networks. These default situations must be interpreted as an exception to the “no reliance” criteria.

addition, QOR also allows us to more easily meet the implementation schedule (see discussion, supra).

II. **THE ORDER SHOULD BE CLARIFIED TO INCLUDE
INTERMEDIATE NETWORKS IN THE IMPLEMENTATION
SCHEDULE**

The Order directs local exchange carriers to implement LNP in the 100 largest MSAs by December 31, 1998 in accordance with Appendix F of the Order.¹⁷ The Order does not appear to address intermediate carriers' (including interexchange carriers) implementation of LNP.

Most of the discussion taking place on number portability is focused on intraLATA call completion (including the discussion in Part I of this PFR relating to QOR use in addition to LRN). But interLATA call completion is just as important. The AT&T LRN call model requires intermediate carriers (N-1) to perform the database dip on interLATA calls.

For example, assume a call is made from a Nynex customer to a former Pacific Bell customer in Los Angeles that has ported to MCI Metro. If AT&T is the long distance carrier, Nynex will hand the call to AT&T and AT&T will need to perform a database query to determine the routing information for that call. After October 1, 1997, when LECs must offer portability, that call, in order to complete properly, must be queried by AT&T so that it can be routed to MCI Metro. However, since AT&T as an intermediate network is not subject to that implementation schedule, they may just deliver the call to the carrier originally assigned the

¹⁷ Order, para. 77.

NXX (Pacific). In that situation, Pacific could either (a) query the database and reroute the call, if ported, or (b) deliver a message to the customer that the call cannot be completed. Option (a) will require reliance on the Pacific Bell network to complete the call, seemingly in violation of Section 52.3(a)(4) of the Commission's Rules. In addition, if we must engineer our network to query all interLATA calls, as well as intraLATA calls, then our costs will increase and our ability to meet the schedule will decrease.

Paragraph 62 of the Order seems to preclude unilateral use of this call processing scenario. The call models assume and paragraph 62 recognizes that, in default situations, the donor network (Pacific Bell, in the above example) may be the only carrier capable of performing the query.

The Commission should clarify that the LEC is not required to engineer its network to handle queries that should have been performed by the intermediate carrier, due to the intermediate network's failure or if that network is not query capable.

The Commission should also direct an industry group to handle various operational and technical issues that need to be addressed as LNP is implemented. For LNP, the North American Numbering Council will administer the regional database(s) but may not be able to handle these other issues. A group such as the Network Operations Forum, under the aegis of the Carrier Liaison Committee,¹⁸ should be charged with resolving these issues. Examples of issues that require resolution on a national scale are:

¹⁸ The Carrier Liaison Committee acted as the industry group for operational issues associated with 800 Number Portability.

- 1) How will TCAP (e.g., Calling Card) traffic that originates outside of a region of portability be routed such that it does not rely on the donor network for routing? This will very likely require a national SMS.
- 2) If different carriers' databases are not synchronized with TCAP routing information, the possibility of circular routing (looping) is very real. Requirements and procedures must be put in place to ensure that this does not occur. Circular routing can result in congestion of the SS7 network which may lead to network outages.
- 3) TCAP routing between networks is unclear. Currently there are two sets of requirements (Bellcore's -- the industry approved specification; and the Illinois Commerce Commission's -- approved only by participants in that state) which conflict.

The Commission should direct an industry group to meet regularly and address these issues.

Failure to adequately address these issues in a timely manner may jeopardize our ability to meet the mandated timeline.

III. PACIFIC SEEKS CLARIFICATION OF ONE ASPECT OF THE
NUMBER PORTABILITY REQUIREMENTS APPLICABLE TO CMRS
PROVIDERS AFTER JUNE 30, 1999

The Order establishes two deadlines for CMRS provision of number portability.

First, cellular, broadband PCS and covered SMR carriers must have the capability of querying appropriate number portability database systems in order to deliver calls from their networks to ported numbers anywhere in the country by December 31, 1998.¹⁹ To accomplish this capability, CMRS carriers may either implement hardware and software upgrades in their own networks or make arrangements with other carriers that are capable of performing database queries. (47 C.F.R. § 52.11(b))

Second, cellular, broadband PCS and covered SMR carriers must offer service provider portability throughout their networks, including the ability to support roaming, by June 30, 1999.²⁰ The Order does not address the manner in which these CMRS providers may query number portability databases in order to maintain the capability to deliver calls to ported numbers. Pacific seeks clarification that after they have implemented service portability on their own networks, CMRS providers are not precluded from making arrangements with other carriers for database queries.

¹⁹ Order at 165.

²⁰ Order at 166.

IV. CONCLUSION

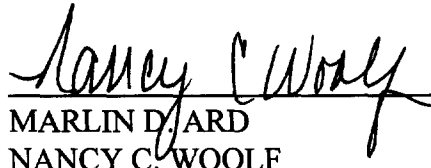
The Order failed to take into account the fact that QOR can be deployed on an optional basis on a per network basis (i.e., on a switch-by-switch or route-by-route basis). The Order should be clarified so that QOR can be used in this limited manner. If QOR is deployed only on calls originated in our network to called numbers whose NXX is assigned to our network, then no reliance on other carriers' networks is present. In addition, any variances in post-dial delay associated with the QOR capability is no greater than exists today in call set up. More importantly, it is the originating caller, not the porting customer, that experiences the delay. No negative competitive effect will result to the new entrants.

We must have a decision made quite quickly so we can meet the Commission's implementation timeline. We therefore request expedited consideration of this matter.

In addition, we request clarification that intermediate carriers must comply with the implementation schedule. Finally, we seek clarification that CMRS providers are not precluded from making arrangements with other carriers to perform database queries.

Respectfully submitted,

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